



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/777,460

02/08/2001

Marcus J.H. Willems van Dijk

P 277120 P-172.010-US

3244

909

7590

11/08/2006

PILLSBURY WINTHROP SHAW PITTMAN, LLP

P.O. BOX 10500

MCLEAN, VA 22102

EXAMINER

BALI, VIKKRAM

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 11/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/777,460	<b>Applicant(s)</b> WILLEMS VAN DIJK ET AL.	
	<b>Examiner</b> Vikram Bali	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-11 and 14-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-11 and 14-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

In response to the amendment filled on 8/11/2006, all the amendments have been entered and the action follows:

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al (US 6420716), (herein after Cox) in view of JP 6-302495, Shigeo (herein after Shigeo).

With respect to claim 1, Cox discloses object place on first position, measuring a displacement, placing the object at the required position, (see col. 4, lines 35-40, wherein it states that an object MA is placed on the first object table MT, and there is a poison mechanism PM for accurately positioning the mask MA "object", also, see col. 2, lines 45-54, wherein it states that the position mechanism to move the corresponding object table to compensate the movements of the projection system) as claimed.

However, Cox fails to explicitly disclose, the displacement is measured with respect to the first object table, translating the object relative to the object table, and removing the object from the first object table in order to placing it back on to the first object table, as claimed. Shigeo teaches the displacement is measured with respect to the first object table, (see the constitution the rotation angles and the figure 8c) and translating the object relative to the object table, removing the object from the first object table in order to placing it back on to the table, (see the constitution the reticle 12 is taken out "remove" and the stage is turned and place it back at the required position, after the reticle is turned in the direction by an angle "translating the object relative to the object table") as claimed.

Therefore, it would have been obvious to one ordinary skilled in the art at the time of invention to combine the two references, as they are analogous because they are solving the similar problem of lithography. The object removing system of the Shigeo can be place in to the Cox, in order to accurately align the reticle at a high speed.

Claim 11 is rejected for the same reasons as set forth in the rejection of claim 1, because claim 11 is claiming subject matter similar to claim 1.

4. Claims 2-7, 9-10, 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al (US 6420716), (herein after Cox) in view of JP 6-302495, Shigeo (herein after Shigeo) and in further view of van den Brink (US 4778275), (herein after 275).

With respect claim 2, Cox and Shigeo disclose the invention substantially as disclose and as describe above in claim 1. However, they fail to disclose aligning a first mark on the object to a second. However, Ref 275 discloses aligning a first mark on the object to a second (see col. 7, lines 25-35) as claimed. It would have been obvious to one ordinary skilled in the art at the time of invention to combine the references, as they are analogous because they are solving the similar problem of lithography. The alignment will provide an apparatus that will align a mask pattern relative to a substrate in which the relative angular orientation of the mask pattern and the substrate is determined directly and thereby getting better yield.

With respect to claim 3, 275 further teaches, second mark is located on the second object table, (see col. 7, lines 37-40, the mark P1 is located on the substrate) as claimed.

With respect to claim 4, 275 further teaches, mask is held by first object table, (see figure 3, mask MA is held by the first object table) as claimed.

With respect to claim 5, 275 further teaches, second mark is located on substrate, (see col. 7, lines 37-40, the mark P1 is located on the substrate) as claimed.

With respect to claim 6 and 7, 275 further teaches, the imaging means and the processing information about first position of the object together with information regarding the required position, (see col. 8, lines 10-35) as claimed.

With respect to claim 9, it is well known the lithography process is done while the mask is place using a vacuum-generating surface. Therefore, it would have been obvious to one ordinary skilled in he art at the time of invention to simply use the vacuum generating surface to hold the mask "object" as it is conventionally done in the art of lithography.

With respect to claim 10, 275 further teaches, the radiation source, (see col. 8, lines 10-15) as claimed.

With respect to claim 14, Cox, Shigeo and Ref 275 fail to disclose the required position corresponds to a position of the object at which a clamping force that clamps the object on the first object table is substantially homogeneous, as claimed. But, it is a design choice to have the marks wherever it is necessary in order to come up with a best alignment. Therefore, it would have been obvious to one ordinary skilled in he art at the time of invention to simply use the design choice as required by the experiments to come up with a best location of the marks fro the best yield.

With respect to claim 15, Shigeo further teaches translating the object, the first table relatively to each other, (see figure 8c) as claimed.

Claims 16-20 are rejected for the same reasons as set forth in the rejection of claims 2, 6, 7, 14 and 15, because claims 16-20 are claiming similar subject matter as claims 2, 6, 7, 14 and 15.

***Response to Arguments***

5. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

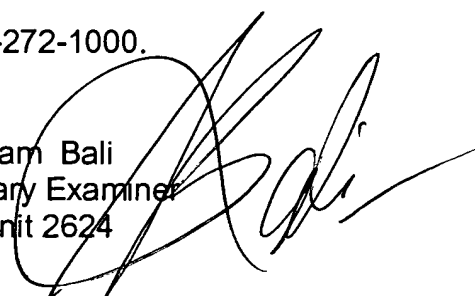
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vikkram Bali whose telephone number is 571.272.7415. The examiner can normally be reached on 7:00 AM - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571.272.7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Vikkram Bali  
Primary Examiner  
Art Unit 2624



vb  
November 2, 2006